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In the United States Patent and Trademark Office

Application Number: 10/695, 551

Application Filed: 2003 Oct 28 (claiming priority to U.S. Provisional Patent Application 60/452,141 filed on March 3, 2003)

Applicant: Loth, John L.

Title: Bearing Life Extender For Conveyor Type Rollers

Examiner/GAU: Douglas A. Hess/3651

AMENDMENT A

Sir:

In response to the Office Action mailed 2004 May 25, applicant submits the following amendments and remarks.

Kindly enter the following amendments.

Please cancel claims 19 and 27 without prejudice or disclaimer.

Please enter claim 37.

**Claims:** *Please amend the claims according to their status designations in the following, which contains all claims that were ever in the application, with the text of all active claims.*

1.-18. (Original)

19. (Canceled)

20. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising a reduced bearing diameter to minimize the possibility of roller stall from high bearing friction torque in non-driven rollers.

21. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of sufficient increase in bearing length and contact area to minimize bearing wear rate.

22. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising keyway cut in the bearing portion of the shaft for the purpose of inserting bearing material inserts, without jeopardizing shaft strength.

23. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of increasing the shaft diameter in between each pair of bearings to render the stationary shaft to be generally non-deflecting in between each bearing pair.

24. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of adding removable rigid shaft clamps around the shaft ends to keep them rigidly aligned with the aid of proper fastening of said clamps to the roller supports.

25. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of a plurality of bearing housings connected to the interior of said roller such that said bearing housings rotate with the roller and therefore their alignment remains assured.

26. (Currently Amended ) The apparatus of claim ~~19~~ 37, further comprising of one or more keyways to attach each individual bearing housing to the roller in a manner to allow for differences in thermal expansion between the stationary shaft and the hollow roller.

27. (Canceled)

28. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of end plates added to each bearing housing as needed to secure the bearing housing sleeve or inserts.

29. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of adding two thrust bearing surfaces, as an integral part of the thickened center portion of the stationary shaft, thereby allowing the two external bearing housings or inserts to absorb both radial and axial thrust loadings.

30. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of using tapered bearings to allow the ~~two external~~ sleeve type bearing housings ~~or inserts~~ to absorb both radial and axial thrust loads.

31. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of centering each bearing housing within the roller by means of vane like radial ribs which act as pump impeller vanes so as to motivate ~~the surrounding fluid in between the shaft and the contracting sleeve-type bearing housings~~ to flow in the radial direction through ports ~~within both the hollow roller wall and the rotating bearing housing~~, for the purpose of bearing cooling or lubrication.

32. (Currently Amended) The apparatus of claim ~~19~~ 37, further comprising of cooling passages on the inside of the stationary shaft for roller bearing cooling in high temperature operating conditions.



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Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Re: U.S. Non-Provisional Utility Patent Application  
Appl. No. 10/695,551 Filed: 2003 Oct 28  
For: Bearing Life Extender For Conveyor Type Rollers  
Inventor: John L. Loth

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Response comprising:
  - A. Amended Claims
  - B. Original Claims
2. One return post card

It is respectfully requested that the attached post card be stamped with the date of filing of these documents and returned as soon as possible.

Sincerely,

Shannon Sheehan  
Representative for Assignee